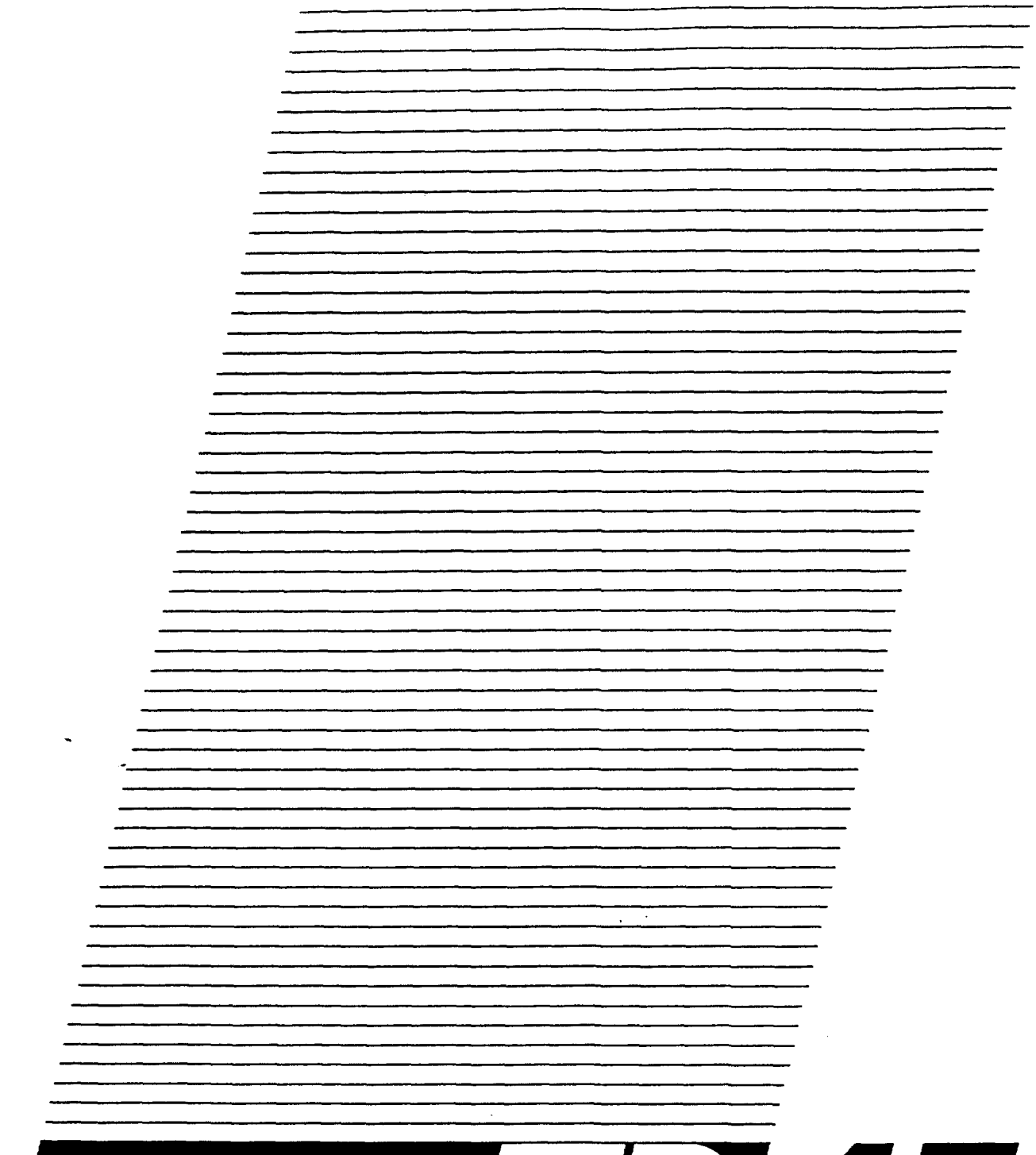

TR45

Enhanced Emergency Services

PN-3581.8

ANSI J-STD-024 Stage 3 Modifications

Ballot Version

ENHANCED EMERGENCY SERVICES: *ANSI J-STD-024* STAGE 3 MODIFICATIONS

LIST OF FIGURES

LIST OF TABLES

None

FOREWORD

This Foreword is not part of this Interim Standard.

This is one of a series of recommendations entitled

"ENHANCED EMERGENCY SERVICES"

which provides a solution for the limited capabilities of wireless Enhanced Emergency Services. These capabilities include:

- provision of base station, cellsite or sector identification information
- subscriber identification
- callback
- reconnect

The recommendations included in this series are:

- PN-3581.1, Enhanced Emergency Services: Functional Overview
- PN-3581.2, Enhanced Emergency Services: PSAP Perspective
- PN-3581.3, Enhanced Emergency Services: Emergency Services Stage 2
- PN-3581.4, Enhanced Emergency Services: *ANSI/TIA/EIA 41* Stage 2 Modifications
- PN-3581.5, Enhanced Emergency Services: *ANSI J-STD-023* Stage 2 Modifications
- PN-3581.6, Enhanced Emergency Services: *TIA/EIA/IS-93* Modifications
- PN-3581.7, Enhanced Emergency Services: *ANSI/TIA/EIA 41* Stage 3 Modifications
- PN-3581.8, Enhanced Emergency Services: *ANSI J-STD-024* Modifications

REVISION HISTORY

Revision	Date	Remarks
0	????	Initial Publication
A		
B		

NOTE

The numbering system of this series of Interim Standards varies from normal TIA/EIA practice. The unique numbering system assigned to these documents is intended to reflect their hierarchical structure.

1. INTRODUCTION

1.1 OBJECTIVE

This document presents recommendations for modifications to*ANSI J-STD-024* Stage 3 for the support Enhanced Emergency Services.

1.2 SCOPE

This document provides a solution for modifications to *ANSI J-STD-024* Stage 3 to support Enhanced Emergency Services.

1.3 ORGANIZATION

This document is organized by the following sections:

- Section 1, entitled "Introduction," provides introductory information for this Interim Standard.
- Section 2, entitled "References," lists the normative and informative references for this Interim Standard.
- Section 3, entitled "Terminology," lists the definitions, symbols, abbreviations, and other documentation conventions used in this Interim Standard.
- Section 4, entitled "*ANSI J-STD-024* Stage 3 Modifications," defines the modifications to the intersystem messaging parameters in *ANSI J-STD-024* necessary to support Enhanced Emergency Services.

2. REFERENCES

The *ANSI/TIA/EIA 41* recommendations are:

- ANSI/TIA/EIA 41.1, *Cellular Radiotelecommunications Intersystem Operations: Functional Overview*
- ANSI/TIA/EIA 41.2, *Cellular Radiotelecommunications Intersystem Operations: Intersystem Handoff Information Flows*
- ANSI/TIA/EIA 41.3, *Cellular Radiotelecommunications Intersystem Operations: Automatic Roaming Information Flows*
- ANSI/TIA/EIA 41.4, *Cellular Radiotelecommunications Intersystem Operations: Operations, Administration, and Maintenance Information Flows*
- ANSI/TIA/EIA 41.5, *Cellular Radiotelecommunications Intersystem Operations: Signaling Protocols*
- ANSI/TIA/EIA 41.6, *Cellular Radiotelecommunications Intersystem Operations: Signaling Procedures*

The *TIA/EIA/IS-93* recommendations are:

- TIA/EIA/IS-93-0, *Cellular Radio Telecommunications Ai - Di Interfaces*

The *ANSI J-STD-023* recommendations are:

- ANSI J-STD-023, *PCN to PCN Intersystem Operations based on PCS1900 Standard, approved for publication.*

The *ANSI J-STD-024* recommendations are:

- ANSI J-STD-024, *Personal Communication Services, SS7 based A-interface Standard, approved for publication.*

3. TERMINOLOGY

3.1 DEFINITIONS

Refer to IS-911.1.

3.2 SYMBOLS AND ABBREVIATIONS

Refer to IS-911.1.

4. *ANSI J-STD-024* Stage 3 Modifications

3.1 RSMAP Procedures

This section describes the procedures used in the RS Management Application Part. These are the main procedures:

- * denotes to dedicated procedures, which are accomplished by using connection oriented services of SCCP.
- # denotes to dedicated procedures, which are accomplished by using connectionless services of SCCP.

* Position Tracking	Figure 3.18

3.1.21 Position Tracking Procedure ***NEW***

The purpose of the position tracking procedure is to retrieve from the Serving PCSC the location number associated to the cell where an emergency call is originated following an inter-PCSC handoff. The procedure relates to a single personal station.

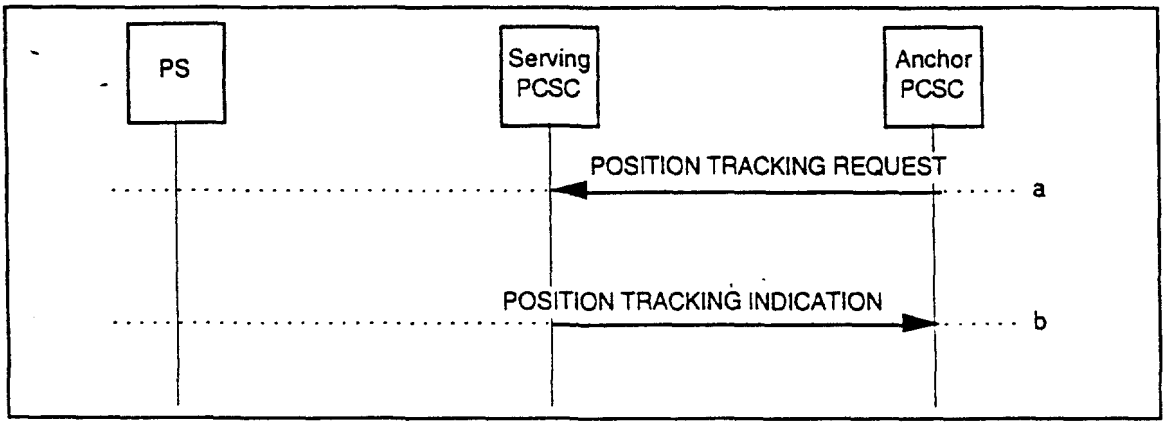

Figure 3.18 Position Tracking Indication

3.1.21.1 Successful Operation

a. The Anchor PCSC retrieves from the Serving PCSC the location number associated to the cell where the parallel transaction has been established and determines the manner in which the Serving PCSC transfers this information by sending a POSITION TRACKING REQUEST message to the Serving PCSC. This message shall contain an Indication Method Information Element which can be set to the following value:

2. (One single position tracking information expected): The Serving PCSC shall return a single POSITION TRACKING INDICATION message with some position tracking information immediately.

b. The transfer of position tracking information related to a given personal station from the Serving PCSC to the Anchor PCSC occurs when the Indication Method Element is set to the value: 2. The Serving PCSC sends POSITION TRACKING INDICATION messages to the PCSC under the conditions explained above. The POSITION TRACKING INDICATION message shall contain the Indication Method ID with the same value as was requested by the Anchor PCSC.

3.1.21.2 Abnormal Conditions

If the Serving PCSC cannot provide the information requested by the Anchor PCSC or cannot interpret the request issued by the Anchor PCSC, the Serving PCSC shall return a POSITION TRACKING INDICATION message with a cause information element set to an appropriate value (e.g., "invalid message contents").

3.2.1.50 Position Tracking Request ***NEW***

This message is sent from the Anchor PCSC to the Serving PCSC and requests location number information.

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message type	3.2.2.1	PCSC-PCSC	M	1
Periodicity	3.2.2.12	PCSC-PCSC	M*	2
Position Tracking Indication method	3.2.2.29	PCSC-PCSC	M	2
Position information type (requested)	3.2.2.53	PCSC-PCSC	O	2

* This element shall always be encoded as if the information element is not used (i.e., "0000 0000").

3.2.1.51 Position Tracking Indication ***NEW***

This message is sent from the Serving PCSC to the Anchor PCSC in response to a position tracking request message.

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message type	3.2.2.1	PCSC-PCSC	M	1
Position Tracking Indication	3.2.2.29	PCSC-PCSC	M	2
Cause	3.2.2.5	PCSC-PCSC	O	3-4
Position information type (reported)	3.2.2.53	PCSC-PCSC	O	2
Location Number	3.2.2.52	PCSC-PCSC	O*+	3-10

*+ This information element is applicable only on the E-interface.

Typical Cause values: as for the handover failure message.

3.2.2 Signaling Element Coding

ECI Coding	Element Name	Reference
0001 1100	(Resource/Position Tracking) Indication method	3.2.2.29
...		
~~0100 0001~~	~~Reserved~~	*
0100 0001	Location Number	3.2.2.52
0100 0010	Position Information type	3.2.2.53
...		
0100 1111	Reserved	*

Bit 8 is reserved for future extension of the code set. All unassigned codes are spare.

8 7 6 5 4 3 2 1	
0 0 0 0 0 0 0 0	RESERVED
GENERAL MESSAGES	
0 0 1 1 1 0 0 0	POSITION TRACKING REQUEST
0 0 1 1 1 0 0 1	POSITION TRACKING INDICATION

3.2.2.12 Periodicity ***NEW***

This element defines the periodicity of a particular procedure. It is fixed length, 2 octets.
The coding is as follows:

8	7	6	5	4	3	2	1	
Element Identifier								octet 1
Periodicity								octet 2

When the Position Tracking Indication IE is set to "method 2, of Volume 5 section 3.1.21.1" then the "Periodicity" IE shall be ignored.

3.2.2.29 (Resource/Position Tracking) Indication Method

This element defines the way the RS shall transfer the resource/position tracking information related to a cell/mobile station to the PCSC. The coding is as follows:

8	7	6	5	4	3	2	1	
Element Identifier								octet 1
Spare				Resource/position tracking indication method				octet 2

The coding of the Position Tracking Indication parameter is:
0001 the method 2, of Volume 5 section 3.1.21.1 is selected.
All other values are reserved.

3.2.2.52 Location Number ***NEW***

The Location Number is coded as a sequence of BCD digits, compressed two into each octet. This is a variable length element, and includes a length indicator. The remainder of this element is coded as defined in *PCN to PCN Intersystem Operations based on PCS 1900, section I.*
The element coding is:

8	7	6	5	4	3	2	1	
Element Identifier								octet 1
Length								octet 2
Rest of element coded as in *PCN to PCN Intersystem Operations based on PCS 1900, Section 1* and *ANSI J-STD-023.*								octet 3 - n

3.2.2.53 Position Information Type ***NEW***

This element contains the position information type requested/reported during position tracking procedure performed on the PCSC-PCSC interface.
It is coded as follows:

8	7	6	5	4	3	2	1	
Element Identifier								octet 1
Position information type								octet 2

The position information type octet is a bit map indicating the type of information that is requested by the sending entity from the receiving entity or that is reported by the sending entity to the receiving entity. From this bit map the receiving entity may report on one or several types of position information at a time.
Bit No.

1 Location Number
2 spare
3 spare
4 spare
5 spare
6 spare
7 spare
8 spare

A bit position encoded as 1 indicates that the Serving PCSC shall report the information represented by that bit position. A bit encoded as 0 indicates that the Serivng PCSC may not report the information represented by that bit position. A position information type octet containing all bits encoded as 0 shall not be used.

5. Annex A: J-STD-024 Volume 5 Annex A

(This is a modified section)

A.5 Use Of The RSAP On The E-Interface

DTAP is used on the E-interface for the transfer of messages between the PCSC-A and the PS. The dedicated RSMAP procedures (Volume 5 section 3.1) used on the E-interface to some extent are:

- Position Tracking procedure

(This is a new section)

A.5.12 Position Tracking procedure

For the Position Tracking procedure (Volume 5 section 3.1.21), the involved PCSCs act according to the following:

- the PCSC-A acts as the PCSC
- the PCSC-I acts as the RS

(This is a modified section)

A.6 RSMAP Messages Transferred On The E-Interface

The following RSMAP messages, defined in Volume 5 section 3.2.1, are transferred on the E-interface:

POSITION TRACKING REQUEST	(PCSC-A -> PCSC-I)
POSITION TRACKING INDICATION	(PCSC-I -> PCSC-A)

Attachment 4

Attachment 4

GSM Customers in North America Top 100,000

PACIFIC BELL.
Mobile Services

GSM Customers in North America Top 100,000...

Date: Thursday, September 26, 1996
Source: PR Newswire

SAN FRANCISCO, Sept. 26 -- With time to market a key to success for new North American Broadband Personal Communications Services (PCS) wireless carriers, the Global Systems for Mobile Communications (GSM) digital services technology bandwagon leads the parade. Late last week at PCS '96 in San Francisco, executives of the nine GSM North American operators announced that there are now more than 100,000 customers in 19 U.S. markets.

"GSM wireless carriers continue to break new ground for the PCS industry," Lyndon Daniels, president and CEO of Pacific Bell Mobile Services and chairperson of GSM North America, the GSM MoU's North American Interest Group, said. "It took the cellular industry almost a year-and-a-half to first reach the 100,000 customer mark. In only 9 months, three GSM carriers have far exceeded that total."

Daniels also announced that there are more than 21 million customers around the world now using GSM digital service, and nearly 200 wireless carriers in 100 countries have chosen GSM.

"Our message today is very simple ... GSM is Here!" said Daniels. "With real customers ... real markets ... real proven, reliable, state-of-the-art technology and a real worldwide, mobile communications standard."

Daniels said that GSM has shown how its tried and true technology gives new PCS carriers a fast head start over competitors. He explained that GSM offers the widest availability of handsets and infrastructure equipment. GSM's feature-rich, mature digital technology and use of smart cards gives added security and flexibility to carriers in providing valued customer service.

According to Daniels, GSM service is already being provided by the following carriers in North America: American Personal Communications (Sprint Spectrum) in the Washington, DC. and Baltimore markets. BellSouth Mobility DCS provides service in the Tennessee markets of Knoxville and Tri-Cities which includes Kingsport, Bristol and Johnson City; the North Carolina markets of Charlotte, Hickory and Gastonia; Raleigh, Durham and Chapel Hill; Greensboro, Winston-Salem and High Point; Asheville; Burlington; Wilmington; and Fayetteville; as well as the South Carolina markets of Greenville and Spartanburg; Columbia; Florence; and Myrtle Beach.

In addition, Western Wireless (VoiceStream Wireless) provides GSM service in Albuquerque and Santa Fe, New Mexico; Honolulu, Hawaii; Salt Lake City, Ogden and Provo, Utah; and Portland and Salem, Oregon.

"Our goal is that GSM customers will eventually be able to cross national, as well as state borders, and find that their mobile services cross with them," Daniels said. "Today, GSM subscribers can roam to 70 countries. By the year

2000, roaming will be possible to more than 100 countries."

Daniels also announced that the consortium of leading PCS providers using GSM technology in the United States and Canada, now will be called GSM North America. In addition, the member companies will use "GSM" instead of "PCS 1900" to describe the digital standard. The alliance also plans to be more proactive in raising awareness about the benefits of the technology.

Member companies of the GSM North America alliance include: American Personal Communications/Sprint Spectrum, American Portable Telecom, BellSouth Mobility DCS, Omnipoint Communications, Inc., Pacific Bell Mobile Services, Pocket Communications, Inc., Powertel. Inc., Microcell Telecommunications Inc., and Western Wireless Corporation. Formed last year, the group's primary purpose is to bring service providers and equipment manufacturers together to identify and resolve issues related to making GSM (Global Systems for Mobile Communications) the premier PCS digital technology.

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Attachment 5

Personal Communications System (PCS) Technology - SIM Card

PACIFIC BELL.
Mobile Services

Personal Communications System (PCS) Technology

Pacific Bell Mobile Phones use state-of-the-art PCS technology. PCS stands for Personal Communication Systems.

The FCC defines PCS as a broad range of radio communications services that free people from the constraints of the regular public switched telephone network — so you can communicate when you're away from your home or office telephones.

The Personal Communications Industry Association (PCIA) forecasts that there will be nearly 15 million subscribers to PCS by the year 2000. In contrast, it took the cellular industry nearly 10 years to reach the 15 million mark. By 2005, PCS will have almost 40 million subscribers.

PCS versus Cellular

Unlike cellular service, PCS is a pure digital technology that offers:

- Superior voice quality
- Fewer dropped calls
- "Over-the-air" customer service, including service activation
- Static-free transmission
- Voice and data communication services over a single, lightweight phone

Plus advanced, multi-featured functionality:

- The convenience of an all-in-one mobile phone, answering machine, and pager
- Simplified data transmission that allows laptop and palmtop computers to be connected to your phone for wireless e-mail, faxing, and access to the Internet and corporate file servers
- Longer "talk" and "standby" times thanks to recent improvements in battery life

Better security than cellular

With cellular technology, other people can use scanners to eavesdrop on your conversa-tions, and you're also at risk that your phone number will be stolen and cloned. A 100% digital PCS network eliminates the risk of eavesdropping on PCS calls and reduces the risk that unauthorized users will make calls using your phone.

PCS Data Capabilities

Pacific Bell Mobile PCS will soon offer two types of data transmission: short text messaging and circuit-switched data at speeds of 9.6 Kbps. In 1997,

transmission speed will increase to 14.4 Kbps.

Unlike cellular, the Pacific Bell Mobile Services PCS network can distinguish voice from data calls for service-specific billing -- so you know exactly what you're paying for.

Continue to check here for up to date information on our optional Data Services.

SIM Card ("Smart Card")

Your Pacific Bell Mobile Phone uses a SIM (Subscriber Identification Module) card or "Smart Card" that stores your phone number, frequently called numbers, billing information, and specific phone features on a computer chip.

The Smart Card is a convenient, small card, typically about the size of a credit card, that contains an individual subscriber's personal calling features, preferences, and other information. In some phone models, such as the Ericsson phone, the Smart Card is a very small, chip-sized device that inserts into the phone.

Please do not remove the Smart Card from your mobile phone -- the phone will not work without it.

Designed as the "brain" of electronic communications devices, Smart Cards are currently being used in Europe, Australia, and many countries in Asia -- as ID cards, replenlishable "electronic purses," library cards, calling cards, portable medical records, and as storage for frequent flyer and loyalty programs. Special capabilities offered by the SIM card used in your Pacific Bell Mobile Phone include:

- Activating, deactivating, and changing your service without requiring you to go to a Service Center.
- Encryption that authenticates the user and network — keeps your phone number private.
- The ability to take advantage of future technology enhancements without buying a new phone.

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